

CONTROL CHART QUICK GUIDE

Types of Variation

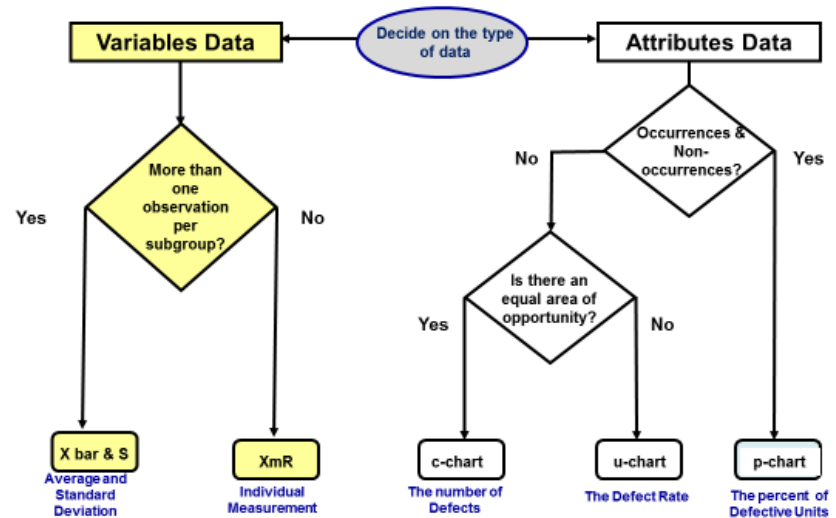
- 1) **Common Cause Variation**
 - Is inherent in the design of the process
 - Is due to regular, natural or ordinary causes
 - Affects all the outcomes of a process
 - Results in a “stable” process that is predictable
 - Also known as random or unassignable variation
- 2) **Special Cause Variation**
 - Is due to irregular or unnatural causes that are not inherent in the design of the process
 - Affect some, but not necessarily all aspects of the process
 - Results in an “unstable” process that is not predictable
 - Also known as non-random or assignable variation

Types of Data

- 1) **Attribute data (count or classification)**
 - Qualitative data that is categorical such as pass/fail, ok/not ok or error/no error
 - Data must be a count of whole numbers when originally collected (can't be a fraction or scale when originally collected)
 - This data is a count of events or occurrences (usually undesirable) and not measured using a scale
- 2) **Variables Data (continuous)**
 - Measurement data that requires some sort of scale
 - Time, money, physical measure (i.e. length, height, weight, temperature) and throughput (volume, workload, productivity, including count scale)
 - Can be whole numbers but also can have decimals or fractions of whole numbers

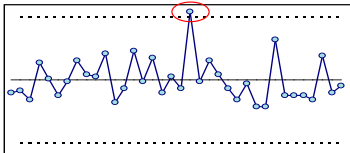
The Control Chart Decision Tree

Source: R. Lloyd. *Quality Health Care: A Guide to Developing and Using Indicators*. Jones and Bartlett, 2004.

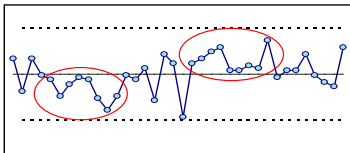


Rules for Detecting Special Causes on Shewhart Charts

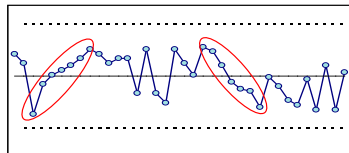
A single point outside the control limits



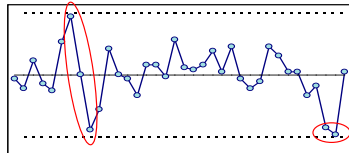
Eight or more consecutive points above or below the centerline



Six consecutive points increasing (trend up) or decreasing (trend down)



Two out of three consecutive points near a control limit (outer one-third)



Fifteen consecutive points close to the centerline (inner one-third)

